International Training Program (TechnoBiz)

Thin-Gauge Thermoforming

Troubleshooting & Cost-Saving Techniques

1-2 June 2009, Century Park Hotel, Bangkok, Thailand

4-5 June 2009, Impiana Hotel KLCC, Kuala Lumpur, Malaysia

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This training program is designed to first ensure that the participant has a very thorough understanding of the basic fundamentals of thermoforming. In order to save costs in the thermoforming manufacturing arena and to quickly and effectively troubleshoot the process, it is of utmost importance that the thermoforming personnel (operators, Technicians, Engineers), first understands how the various thermoformable polymers respond to the various thermoforming processes and how the plastic sheet material reacts during heating, forming and trimming. All the thermoforming processes and techniques used today are presented during this training session and the advantages and disadvantages of each including all machinery and tooling related problems are discussed. While presenting the topics mentioned below, Mr. Mark Strachan, Program Instructor will be discussing in detail, the cost saving and troubleshooting aspects of each. In the advanced Thermoforming Techniques part of the training session, many valuable techniques that will help you to save money will be discussed. These include down gauging the sheet thickness, material distribution, and advanced plug assisting techniques. Mr. Strachan will be including many tips on how to ensure part quality and consistency from cycle to cycle and from one production run to the next.

Program Outline

Thin-Gauge Thermoforming 101

A session on the basic but fundamental aspects of thin-gauge thermoforming

- Thin-Gauge plastic sheet feeding methods – pin-chains, nip-roll, etc
- Heating the sheet, hardware and important set-up conditions
- The basic thermoforming processes & techniques – drape, pre-billow, plug assist, etc
- Trimming the part using steel rule, forged knives and matched metal punch and Dies
- Stacking the part – all the part stacking methods available in the industry today

Cost Saving Techniques in Thin-Gauge Themoforming

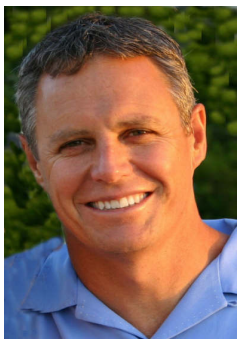
An in-depth session on how you can save money and produce quality, Thermoformed parts

- The Production facility – The right conditions and environment for cost savings!
- Prototyping – How to eliminate the fudge factor!
- Thermoforming equipment – The right machine for the job!
- Advanced Forming Techniques – The forming techniques that save money – vacuum bleed, coining
- Punching the Parts – Cost effective part punching techniques (hang holes, etc)
- Trimming the Part – An in-depth look at thin-gage trimming techniques and cost saving
- considerations of each
- Parts Handling Techniques - The stacking techniques and downstream part handling devices that and how these help to save you money!

Troubleshooting the Thermoforming Process

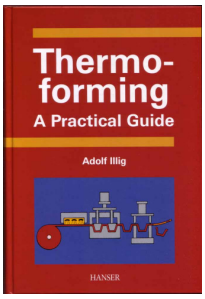
- The process of Troubleshooting – Step by Step tips on how to begin troubleshooting
- Instruments required for efficient and timely troubleshooting
- Computer aided troubleshooting and simulations
- Birefringence testing
- Sheet related problems – gels, flow marks, orientation, blow holes, specs and particulates
- Machinery related problems – heater elements & controls, air pressure, vacuum…
- Tooling related problems – material, vent holes, cooling
- Testing of the sheet extrusion Polymers and downstream sheet output
- Collection of data and analysis
- Creating a troubleshooting and Quality control story board

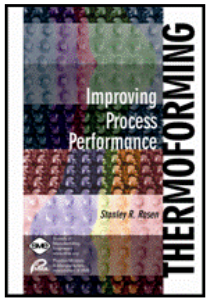
Program Instructor – Mr. Mark Strachan



Mark Strachan - President, Global Thermoforming Technologies Inc has been involved in the Thermoforming Packaging Industry for the past 29 years and has worked with many successful thermoforming machinery OEMS and Thermoforming companies around the world including Duracell, Gillette, Loctite, Oral-B, Colgate, PIMA, Mary-K, Nestle', Kroger, Rich's, Kodak, Mardec, Linpac, Dolphin, Huhtamaki to name a few. During this time, Mark has gained valuable experience in the Plastics Thermoforming and Extrusion Industry, and related machinery and materials handling issues. Due to increased request for assistance and his desire to impart this knowledge Mark formed Global Thermoforming Technologies Inc. He has since been presenting hands on training to thermoforming & sheet extrusion companies worldwide and for the Society of Plastic Engineers -SPE and Universities and training establishments such as Penn State College of Technology and the Royal Melbourne Institute of Technology. Mark is the author and developer of many in-house thermoforming training programs which include hands-on and interactive computer based thermoforming training programs. Mark has worked extensively with Thermoforming companies to develop, patent and launch their products successfully in the market. He is currently in the process of publishing a comprehensive Thermoforming book with William Andrew Publishing in Massachusetts, USA

Registration Fee





❑ 550 US$ / Participant (Before 30 April 2009)

❑ 700 US$ / Participant (After 30 April 2009)

The registration fee includes training materials, lunch and refreshments during the program. Payment is required with your registration.

Group Registration:

Free Book!! "Thermoforming – Improving Process Performance" (ONE copy for every two delegates from the same organization).

If you register 3 delegates from the same organization, 2 books FREE !! (1 copy of "Thermoforming – Improving Process Performance" + 1 copy of "Thermoforming – Practical Guide").

Program Agenda: 08.30 am to 17.00 pm (each day)

Organized by:

TechnoBiz

TechnoBiz Communications Co., Ltd.
No. 300/53, Soi Lardprao 35/1, Lardprao Road,
Chandrakasem, Chatuchak, Bangkok 10900 Thailand
Tel: 66-2-938 2315 Mobile: 66-84-658 1444 Fax: 66-2-513 1301
Email: training@technobiz-asia.com Web: www.technobiz-asia.com
Contact Person : Ms. Saowalak, Training Coordinator

International Training Program (TechnoBiz)

Thin-Gage Thermoforming

Registration Form

Instruction: Please fill all the information in English only

We confirm to participate

- ❑ 1-2 June 2009 (Century Park Hotel, Bangkok, Thailand)
- ❑ 4-5 June 2009 (Impiana Hotel KLCC, Kuala Lumpur, Malaysia)

Organization Name ……

Address ……

……

Tel ……Fax …… Email ……

Contact Person …… Tel …… Email ……

Participant Names :

Participant 1: …… Position …… Email ……

Participant 2: …… Position …… Email ……

Participant 3: …… Position …… Email ……

Participant 4: …… Position …… Email ……

Registration Fee per Participant: ❑ 550 US$ (before 30 April 2009)

❑ 700 US$ (after 30 April 2009)

Payment is required with registration. Walk-in delegates with payment will be admitted subject to space availability.

Payment Method

❍ Bank Transfer to Bangkok Bank, Ratchada-Latphrao Road Branch, A/C No: 177-0-70727-9
A/C Name: TechnoBiz Communications Co., Ltd., Swift Code: BKKBTHBK
(Kindly make payment for all bank charges)

❍ Credit Card ❑ Visa ❑ Master Card

Card Number ……

Cardholder Name ……

Last 3 digits on signature panel ……Card Expiry Date ……

Signature of Cardholder ……

Date ……

Please send completed registration form to

TechnoBiz Communications Co., Ltd.
No. 300/53, Lardprao Soi 35/1, Lardprao Road, Chandrakasem, Chatuchak, Bangkok 10900 THAILAND
Tel: 66-2-938 2315 Mobile: 66-84-658 1444 Fax: 66-2-513 1301 Email: training@technobiz-asia.com
website : www.technobiz-asia.com Contact Person: Khun Saowalak, Coordinator